

REMARKS

Claims 1-7 are pending in this application, of which claims 1-3 and 5-7 have been amended. No new claims have been added.

Claim 1 stands rejected under 35 U.S.C. §103(a) as unpatentable over U.S. patent 5, 176,321 to Doherty (hereafter "**Doherty**").

Applicants respectfully traverse this rejection.

Doherty discloses a device for electrostatically charging and dispensing a high resistivity cutting lubricant to a workpiece including a source of high resistivity cutting lubricant and a capillary tube having an entrant end in fluid communication with the high resistivity cutting lubricant and a tapered discharge end forming a sharp point. A high voltage power supply is used for generating a high voltage of less than 5,000 volts d.c. The power supply has a positive terminal and a negative terminal. A high voltage electrode has its one end connected to the positive terminal of the power supply and has its other end operatively coupled to the discharge end of the capillary tube. A nearby grounded electrode is disposed in a spaced-apart relationship from the discharge end of the capillary tube so as to create a high electric field therebetween for electrostatically charging the lubricant. The lubricant is atomized and projected in the form of a steady and controlled stream of charged particles away from the discharge end of the capillary tube to within the vicinity of or all the way to the workpiece before the stream of charged particles bursts into an aerosol cloud of charged droplets for dispensing them onto the workpiece.

The Examiner has admitted that **Doherty** fails to disclose a cation exchanger configured to remove mineral ions from the water, but has urged that providing one would be obvious to one of ordinary skill in the art.

Applicants respectfully disagree. **Doherty** discloses no more than Applicants' admitted prior art discussed on page 1 of the specification of the instant application, where both references fail to disclose the cation exchanger. Like these references, **Doherty** fails to even recognize the problem of preventing minerals from clogging up

the distal end of the capillary structure, a problem which is solved by the present invention. Thus, it would not be obvious to supply such a cation exchanger to Doherty to remove mineral from the atomized water.

Furthermore, it is not clear where such a cation exchanger could be physically located in the device of Doherty.

Claim 1 has been amended to further distinguish it from the teachings of non-applied references cited in the Information Disclosure Statement attached hereto.


The Examiner has indicated that claims 2-7 would be allowable if rewritten in independent form. Accordingly, claims 2-3 and 5-7 have been so amended.

In view of the aforementioned amendments and accompanying remarks, claims 1-7, as amended, are in condition for allowance, which action, at an early date, is respectfully solicited.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1105.

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Respectfully submitted,

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